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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/242,096

05/26/1999

MICHAEL J. KEMP

R0346/7016

9589

7590

12/16/2004

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EXAMINER

PENDLETON, BRIAN T

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/242,096

Applicant(s)

KEMP, MICHAEL J.

Examiner

Brian T. Pendleton

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-20 is/are rejected.
- 7) ☒ Claim(s) 2 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 9, 10, 12, 13, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Coleman et al, US Patent 5,796,849. Coleman discloses an active noise control system comprising an input signal from microphone 13, FIR filter 151, and output signal 158. Least Mean Square (LMS) circuit 152 also receives and assesses the input signal. The FIR filter changes its transfer function as a result of the assessment. Thus the filter 151 selects between at least two impulse responses and applies the impulse response to the input to derive an output signal 158 based on the assessment of the input signal. Claims 1 and 10 are met. Regarding claims 3 and 12, the circuit 152 uses the amplitude of the input signal and the resultant noise signal from error microphone 12 to select an impulse response. Per claims 4 and 13, the predetermined threshold is the relationship between the input signal and the resultant noise signal. As to claims 9 and 18, amplitude is monitored, which is time-dependent. As to claims 19 and 20, the changing coefficients from LMS circuit 152 represent a plurality of impulse responses. The various coefficient sets when convolved with input signals will simulate different audio signal processing. As a result, the responses of different audio signal processors are stored.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman in view of Su et al. Coleman does not disclose selecting the impulse response using an user input. However that feature was well known in the art as demonstrated by Su et al. In figure 10, Su et al teach a parameter control unit 72 which controls the wave ladder filters 52 through user input. The wave ladder filters 52 are impulse response filters which simulate the reflection of a wave off an object. The filters contain delay and gain elements and the number of elements and their magnitudes represent an impulse response. These filters were controlled by unit 72. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize user input in the invention of Coleman per the teachings of Su et al since it was a well known practice.

Claims 5-7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman in view of Higashi. Coleman does not disclose determining when the amplitude of the input signal is between two values and generating an impulse response dependent on the position of the amplitude between the two values wherein more than one impulse response is used and applied in proportions which sum to one. To one of ordinary skill in the art, the claims are calling for interpolation. However interpolating an impulse response using an input signal was known in the art, as evidenced by Higashi. Higashi teach a system whereby sound localization

coordinates are input to a FIR table. In the case where the coordinates do not match exactly with entries in the table, interpolator 27 is used to select an impulse response. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Higashi in the invention of Coleman

Allowable Subject Matter

Claims 2 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

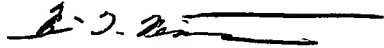
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Brian T. Pendleton
Examiner
Art Unit 2644